**PROGRAM 12:**

The main function of the Intermediate code generation is producing three address code statements for a given input expression. The three address codes help in determining the sequence in which operations are actioned by the compiler. The key work of Intermediate code generators is to simplify the process of Code Generator. Write a C Program to Generate the Three address code representation for the given input statement.

CODE:-

#include <stdio.h>

#include <ctype.h>

#include <string.h>

#define MAX 100

char stack[MAX][MAX];

int top = -1, tempVar = 1;

void push(char \*str) {

strcpy(stack[++top], str);

}

void pop(char \*str) {

strcpy(str, stack[top--]);

}

int isOperator(char c) {

return (c == '+' || c == '-' || c == '\*' || c == '/');

}

void generateTAC(char \*postfix) {

char operand1[MAX], operand2[MAX], result[MAX], op[2];

printf("\nThree Address Code:\n");

for (int i = 0; postfix[i] != '\0'; i++) {

if (isalnum(postfix[i])) {

char operand[2] = {postfix[i], '\0'};

push(operand);

} else if (isOperator(postfix[i])) {

pop(operand2);

pop(operand1);

sprintf(result, "t%d", tempVar++);

printf("%s = %s %c %s\n", result, operand1, postfix[i], operand2);

push(result);

}

}

}

int main() {

char postfix[MAX];

printf("Enter the postfix expression: ");

scanf("%s", postfix);

generateTAC(postfix);

return 0;

}

OUTPUT:-

